AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

1 – 17. (Canceled)

18. (Currently Amended) A method for implementing call routing, to be used in a next generation network using a~soft switch control device(s) as a~core control device(s), comprising implementing call routing by route service devices,

wherein implementing call routing by the route service devices comprises the following steps of:

(a) upon a user route change, the~a_soft switch control device reporting a changed route information to a~route service device(s) at a~father node(s) of the soft switch control device, the changed route information including user characteristics information, user node information and route operation type;

(b) the route service device(s) that received the reported changed route information looking up a record of a user to be registered from a route information database, and registering a route record of the user to the route information database according to the reported changed route information and content of the record of the user;

(c) when a route information of the user reflects a change between a local node and a~its father node, the route service device(s) that finished registration broadcasting the route information reflecting the change to route service device(s) at the~father node(s) of the route service device(s) that finished registration;

(d) a~the_route service device(s) that received the broadcasted route information registering and broadcasting the received broadcasted route information according to the same method as the

route service device(s) that received the reported changed route information;

(e) when calling across domains, the a soft switch control device to which the calling belongs initiating an inquiry to the route service device(s) at a father node(s) of the soft switch control device to which the calling belongs;

(f) the route service device(s) that received a request of the inquiry looking up a route record of a user to be looked up from the route information database, if an inquiring result of the route of the user or an inquiring result indicates that the user does not exist is obtained, performing step (h), otherwise, performing step (g);

(g) the route service device(s) continuing an inquiry to a node in said route record, if there is no route record, continuing an inquiry to its father node(s), and returning to step (f); and

(h) returning the inquiring result to the node that initiated the inquiry, any node that receives the inquiring result continuing to return the inquiring result, until returning to the soft switch control device which first initiated the inquiry.

19. (Previously Presented) The method of claim 18, wherein when performing registration in step (b), if the operation type of the reported changed route information corresponds to user moving in, when there is no route record of the user in the route information database, establish a new record, when the record information of the user is different from the reported changed route information, update the record in conformity with preset condition, otherwise, not perform the operation; if the operation type of the reported changed route information corresponds to user moving out, delete or update the route record of the user which has the same node information.

20. (Previously Presented) The method of claim 18, wherein said operation types have two kinds, which are addition and deletion; or have three kinds, which are addition, move-out and account-cancel, and said user characteristics information includes information of specific domain.

21. (Previously Presented) The method of claim 18, wherein the user node in said step (a) is a type of soft switch control device, or a type of route service device.

22. (Previously Presented) The method of claim 18, wherein in said step (c), when a route information of the user reflects a change between the local node and a designated brother node, the route service device that finished the registration also broadcasts the route information reflecting the change to the designated brother node.

23. (Previously Presented) The method of claim 18, wherein said operation types have two kinds, which are addition and deletion, in said step (f), the route service device performing the inquiry makes judgment according to a looking up result in the route information database by following logic:

if the looking up result is that there is no record of user to be inquired, for a local node which is at the highest layer, obtaining the looking up result that there is no user, for a local node which is not at the highest layer, continuing an inquiry; and

if there is record of user to be inquired in the looking up result, when the user node in the route record is a soft switch control device, obtaining the inquiring result of the route of the user; when the user node in the route record is not a soft switch control device, continuing an inquiry.

24. (Previously Presented) The method of claim 18, wherein said operation types have three kinds: addition, move-out and account-cancel, in said step (f), the route service device performing inquiry makes judgment according to the looking up result in the route information database by the following logic:

if the looking up result is that there is no record of user to be inquired, for a local node which is at the highest layer, obtaining a looking up result indicating that there is no user, for a local node which is not at the highest layer, continuing an inquiry;

if the looking up result is that there is record of user to be inquired, identifying the operation type in the record:

when the operation type is addition, if the user node in the record is a type of soft switch control device, obtaining the looking up result of the route of the user; if the user node is a type of route service device, continuing an inquiry;

when the operation type is move-out, if the local node is at the highest layer, obtaining a looking up result indicating that there is no user; if the local node is not at the highest layer, continuing an inquiry; and

when the operation type is account-cancel, obtaining a looking up result indicating that there is no user.

25. (Currently Amended) A system for implementing call routingrealizing the method of claim 18, to be used in a next generation network using a-soft switch control device(s) as a-core control device(s), comprising a plurality of soft switch control devices with users,

wherein, the system further comprises a plurality of route service devices, each of said route service devices and each of said soft switch control device form a node of the system, and the nodes are networked in a layered form, each sub-node has at least a father node, and each father node has at least a sub-node, said soft switch control device is a node at the lowest layer, and said route service device should have a sub-node, wherein:

said soft switch device reports changed route information to the route service device at a father node when its user adding or moving out, and initiates a route inquiry to the route service device at the father node when its user calls across domains; and

said route service device is for registering the reported information, performing adding, deleting and updating of route record in a route information database, broadcasting the changed route information to related node, performing inquiry after receiving the inquiry request, and returning inquiring result to the node initiating the inquiry.

26. (Previously Presented) The system of claim 25, wherein said route service device comprises a route information database module, a route registration module, a route broadcast module and a route inquiry module,

wherein the route information database module is for storing a route record of a user, inputting the route record of the user, and providing an interface for accessing the route record of the user;

wherein the route registration module is for receiving a route information reported or forwarded by the route broadcast module, looking up a record of a user to be registered from the route information database, and registering the route record of the user to the route information database according to the reported route information and content of the user record;

wherein the route broadcast module is for receiving a broadcasted route information, and when a route information of a user reflects a change between a local node and its father node, or between the local node and both the father node and a designated brother node, broadcasting the route information of the user reflecting the change to its father node or both to the father node and the designated brother node; and

wherein the route inquiry module is for receiving or sending an inquiry request, looking up a record of a user to be inquired from the route information database, returning an inquiring result to a node requesting the inquiry upon finding a route of the user, upon determining that there is no user or upon receiving an inquiring result provided by other nodes, otherwise, continuing an inquiry to the node in the route record, and if there is no route record, then continuing an inquiry to its father node.

27. (Previously Presented) A route service device to be used in a next generation network, comprising:

a route information database module,

a route registration module,

a route broadcast module, and

a route inquiry module,

wherein the route information database module is for storing a route record of a user, inputting the route record of the user, and providing an interface for accessing the route record of the user;

wherein the route registration module is for receiving a route information reported or forwarded by the route broadcast module, looking up a record of a user to be registered from the route information database, and registering the route record of the user to the route information database according to the reported route information and content of the user record;

wherein the route broadcast module is for receiving a broadcasted route information, and when a route information of a user reflects a change between a local node and its father node, broadcasting the route information of the user reflecting the change to its father node; and

wherein the route inquiry module is for receiving or sending an inquiry request, looking up the a record of a user to be inquired from the route information database, returning an inquiring result to a node requesting the inquiry upon finding a route of the user, upon determining that there is no user or upon receiving an inquiring result provided by other nodes, otherwise, continuing an inquiry to the node in the route record, and if there is no route record, then continuing an inquiry to its father node.

28. (Previously Presented) The route service device of claim 27, wherein said route registration module comprises:

a report information receiving unit, for receiving route information reported by a soft switch control device, or forwarded by the route broadcast module;

a registration access unit, for looking up the route record of the user in the route information database according to the information of the user to be registered in the reported information; and

a register judgment unit, for establishing a new record if there is no route record of the user when the operation type corresponds to the user moving in, updating the record in the database in conformity with preset condition if the route record information of the user is different from the

reported information, otherwise, not performing operation; deleting or updating the route record of the user if the operation type of the report information corresponds to user moving out and the user node in the user record is same to the node in the reported information.

29. (Previously Presented) The route service device of claim 27, wherein said route broadcast module comprises:

a broadcast information receiving unit, for receiving the route information broadcasted by other nodes, forwarding the information to the route registration module;

a broadcast judgment unit, for judging whether the a route information of the user to be registered reflects a change between its node and its father node, if yes, handing over the route information of the user to the route information broadcast unit; and

a route information broadcast unit, for broadcasting the changed route information to the father node.

30. (Previously Presented) The route service device of claim 27, wherein said route inquiry module comprises:

an inquiry interface unit, for receiving an inquiring request from other nodes or sending an inquiry request to other nodes, and returning the inquiring result of the route inquiry module to the node requesting the inquiry or forwarding the inquiring result received from other nodes;

an inquiry access unit, for looking up in the route information database according to the characteristic information of the user to be looked up in the inquiry request, and reporting the inquiring result to an inquiry judgment unit; and

an inquiry judgment unit, for judging whether the inquiring result is that the user route is obtained or the user does not exist according to a looking up result, or it is necessary to send the inquiry request to related node, and to indicate the inquiry interface unit to perform corresponding operation.

31. (Previously Presented) The route service device of claim 27, wherein when the route information of the user reflects a change between local node and a designated brother node, said route broadcast module broadcasts the route information reflecting the change to the designated brother node.

32. (Previously Presented) The route service device of claim 30, wherein the operation types of said route record have two kinds: addition and deletion, said inquiry judgment unit makes judgment according to the looking up result in the route information database by the following logic:

if the looking up result is that there is no record of the user to be looked up, for a node that is at the highest layer, determining that the user does not exist, for a node that is not at the highest layer, continuing an inquiry; and

if the looking up result is that there is record of user to be looked up, when the user node in the route record is a soft switch control device, obtaining the user route, when the user node is not a soft switch device, continuing an inquiry to the user node in the record.

33. (Previously Presented) The route service device of claim 27, wherein the operation types of the route record have three kinds: addition, move-out and account-cancel, said inquiry judgment unit makes judgment according to the looking up result in the route information database by the following logic:

if the looking up result is that there is no record of user to be looked up, for a node that is at the highest layer, determining that the user does not exist; for a node that is not at the highest layer, continuing an inquiry, or returning father node to the inquiry node as a next jump inquiry node, so as to instruct the inquiry node to perform route inquiry with the next jump inquiry node;

if the looking up result is that there is record of user to be looked up in the looking up result, discerning the operation type in the record again:

when the operation type is addition, for the user node in record being a soft switch control device, obtaining the user route; for the user node being the route service device, continuing an inquiry to the user node, or returning the user node to the inquiry node as a next jump inquiry node, so as to instruct the inquiry node to perform route inquiry with the next jump inquiry node;

when the operation type is move-out, for a node that is at the highest layer, determining that the user does not exist, for a node that is not at the highest layer, continuing an inquiry to its father node, or returning the father node to the inquiry node as a next jump inquiry node, so as to instruct the inquiry node to perform the route inquiry with the next jump inquiry node; and

when the operation type is account-cancel, determining that the user does not exist.